

Please add the following new claims:

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26. A treatment composition according to Claim 16 wherein the surfactant is a cationic surfactant selected from the group consisting of cetyltrimethylammonium chloride, cetyltrimethylammonium bromide and mixtures thereof.
27. A treatment composition according to Claim 26 wherein the composition further comprises cholesterol and wherein the ratio of cholesterol to cationic surfactant is in a range from about 0.1 : 1.0 to about 1.0 : 1.0.
28. A treatment composition according to Claim 27 wherein the ratio of cholesterol to cationic surfactant is in a range of from about 0.5 : 1.0 to about 1.5 : 1.0.
29. A treatment composition according to Claim 28 wherein the ration of cholesterol to cationic surfactant is in a range from about 0.7 : 1.0 to about 1.25 : 1.0.
30. A treatment composition according to Claim 21 wherein the reactive agent has a cationic charge and the surfactant has a cationic charge.

#### REMARKS

##### Application Amendments

Claims 1-25 are pending in this application and all presently stand rejected. By the amendments presented, Claim 22 has been amended to more specifically define the present invention and remove the use of the trademark ISOPAR C. Support for this amendment is found in the specification on page 13, lines 8-11. The Examiner has raised a rejection to Claim 24 with regard to the phrase "long-lasting treatment effects" being unclear. Applicants believe that this phrase is readily understood to one of skill in the art. The phrase "long-lasting treatment effects" is associated with the coloring of hair. Support for the phrase is found in the specification on page 1, lines 15 -18 wherein the specification describes that it is well known that if such treatment can be done by some kind of safe covalent attachment to the substrate, that the treatment will be much more long lasting. Therefore, several reactive chemistries have been developed to provide covalent attachment to amino acid based substrates such as hair. Applicants respectfully submit reconsideration of the 35 U.S.C. § 112 claim rejections based on the remarks above.

New Claims 26-30 have been added to more specifically define the present invention. Support for the new claims can be found as follows: support for Claims 26-29

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can be found in the specification on page 15, lines 30-33 and page 16, lines 1-3. Support for Claim 30 can be found on page 18, lines 13-16. No new matter has been added.

### **Invention Synopsis**

The present invention relates to a treatment composition, comprising an aqueous continuous phase; a reactive component comprising a reactive agent and a water immiscible solvent, wherein the water immiscible solvent solubilizes the reactive agent; and one or more surfactants wherein the surfactants emulsify the reactive component in the aqueous phase to form a bi-layer emulsion. While not being bound to theory, it is believed that the water immiscible solvent comprising the reactive agent serves as a diffusion barrier that minimizes contact between the chemically unstable reactive agent and the aqueous phase. The structured bi-layers surrounding the water immiscible solvent are a further barrier between the reactive agent and the aqueous phase. The bi-layers also serve to keep the reactive agent dispersed within the aqueous continuous phase over the shelf life of the composition to enable the delivery of the reactive agent to the hair in a consumer preferable medium.

### **Art Rejections**

#### **35 U.S.C. § 103(a)**

Claims 1-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gough et al, U.S. 5,525,332, collectively "Gough", and Deppert et al, U.S. Patent 5,087,733, collectively "Deppert". The Examiner has asserted that one of ordinary skill in the cosmetic art would have been motivated to incorporate the polymer of Deppert into the emulsions of Gough, in order to achieve similar conditioning results. Both references teach the claimed polymers are useful due to their chemical affinity to substrates including hair.

Gough et al discloses a cosmetic composition, especially for providing a conditioning benefit to hair, incorporating an azalactone-functionalized copolymer consisting of vinyl azalactone and methacryloyl polymethysiloxane monomers. Gough teaches preferred azlactone functionalized materials which are water soluble or soluble in water/alcohol, to enable compositions to be prepared as aqueous or aqueous/alcoholic solutions or emulsions. (Column 7, lines 49-54) or alternatively, the active materials may be soluble/dispersible in organic solvents only, e.g., alcohols, hydrocarbons, etc. to make them particularly suitable for formulation into mousse- or spray- type products (Column 7, lines 60-64). As the Examiner has kindly pointed out, Gough is silent as to a nucleophilic reactive group of thiol type reactive agents, as taught in the present invention.

However, Gough is also silent and does not teach the inclusion of the azlactone polymer with silicone functional group within a water immiscible solvent wherein the solvent is then emulsified within the aqueous phase into structured bi-layers phases, as taught by the present invention. Likewise, Gough is silent with regard to wherein the structured bi-layers are charged and further wherein the structured bi-layers are formed of surfactants having the same net charge of the reactive agent which are further embodiments of the present invention.

For example, Gough exemplifies treatment of the azlactone functionalized materials in Examples 1-5 from pure toluene (Column 13, lines 39-42), toluene/water (Column 14, lines 28-33), toluene/0.1M Na<sub>2</sub>CO<sub>3</sub>(aq) (Column 15, lines 60-64), pure water (Column 17, lines 5-10 and Column 18, lines 15-22).

Further, Gough teaches the use of an optional emulsifier when delivered as an emulsion to stabilize the emulsified particles of the active, as is well known in the art, and further it may contain one or more surfactants in order to provide detergent action simultaneously with the imparting of cosmetic benefit(s) (Column 9, lines 12-17) including anionic, nonionic, amphoteric and zwitterionic surfactants (Column 9, lines 21-24). However, no mention is made as to the use of these surfactants to form structured bilayers with Gough describing these only as emulsifying agents and to impart detergent action as cited above. Moreover, the specific surfactants disclosed are not well suited to the formation of structured bilayers by themselves with the absence of the typical bi-layer forming surfactants such as described in the present invention i.e. phospholipids, cholesterol.

Moreover, Gough does not disclose the use of cationic surfactants at all which precludes the ability to form bilayers with a positive charge, an embodiment of the present invention. Indeed, Examples I-VIII of the present invention exemplify structured cationic bi-layers comprising bi-layer forming surfactants, e.g., cholesterol at high levels in combination with cetyltrimethylammonium chloride.

Deppert discloses processes for conditioning human hair by treatment with selected sulfur containing quaternary ammonium compounds, compositions useful for such processes and novel quaternary compounds useful for the processes. However, Applicants view Deppert as being even less descriptive than Gough in terms of possible formulation adjuncts and providing no motivation for the combination of this reference with Gough. In column 10, lines 44-49, Deppert mentions very briefly a list of common formulation excipients including coloring agents, fragrances, surfactants, buffers etc., and emulsifying agents. However, in Deppert, there is no mention of structured bi-layers as taught & required in the present invention. Further, there is absolutely no mention of a water immiscible solvent within Deppert as well. Therefore, one of skill in the art would not be

motivated to combine the teaching of Gough and Deppert in order to arrive at the present invention, in that neither of these reference, either alone or combination, disclose within an aqueous continuous phase; a reactive component comprising a reactive agent and a water immiscible solvent, wherein the water immiscible solvent solubilizes the reactive agent; and one or more surfactants wherein the surfactants emulsify the reactive component in the aqueous phase to form a bi-layer emulsion,, as taught by the present invention. Further, no mention is made in either Gough or Deppert of the use of surfactants and water-immiscible solvents to form structured bilayers, as taught by the present invention. Combining the teachings of Gough with Deppert does not arrive at the delivery system of the present invention.

Therefore, one of ordinary skill in the art would not have been lead to modify the compositions of Gough by adding or blending the teachings of Deppert and successfully arrive at the present invention.

### **No Prima Facie Case**

Applicant respectfully traverses this obvious rejection as Gough and Deppert do not establish a prima facie case of obviousness because they do not teach or suggest all of the Applicant's claim limitations. None of the references, either alone or in combination, teach the specific composition as required by the present invention. Namely, as the Examiner has pointed out, Gough does not teach the use a nucleophilic reactive group of a thiol type reactive agent of the present invention and further does not teach the use of selected surfactants and water immiscible solvents to form structured bilayers. Deppert, while disclosing the use of selected sulfur containing quaternary ammonium compounds, is also silent with regard to the use of selected surfactants and water immiscible solvents to form structured bilayers. Therefore there would be no motivation to one of skill in the art to combine the teaching of Gough with that of Deppert with any reasonable expectation for success at arriving at the present invention's discovery of a delivery system that will enable the formulation and delivery of reactive agents from an aqueous composition that is shelf stable and the benefits achieved.

Therefore, there is no prima face case of obviousness since none of the references, either alone or when combined, teach or suggest all of the Applicant's claim limitations.

In light of the arguments presented herein, it is respectfully submitted that the rejection of the claims under 35 U.S.C. § 103(a) be withdrawn.

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**Conclusions**

Applicants have made an earnest effort to place their application in proper form and distinguish their claimed invention from the references which were applied in the October 23, 2001 Office Action. WHEREFORE, consideration of this application, withdrawal of the rejections under 35 U.S.C § 112 and 103, and allowance of the pending Claims are respectfully requested.

Respectfully submitted,

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April 23, 2002

**VERSION WITH MARKINGS TO SHOW CHANGES MADE****In the Claims:**

22. (AMENDED) A treatment composition according to Claim 1, wherein the treatment composition comprises from about 1% to about 4%, by weight, of thiol pyrimidinium, from about 3% to about 30%, by weight, of a volatile hydrocarbon compound having about 12 to about 24 carbon atoms and having a boiling point of about 90°C to about 250°C [Isopar C], from about 5% to about 30%, by weight, of cetyltrimethylammonium chloride, and from about 36% to about 91%, by weight, of the aqueous continuous phase.